Original Research

The Effect of Patient Aggression on Healthcare Workers' Mental Health and Anxiety Mediated by Psychological Well-being during the COVID-19 Outbreak

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Abstract

The aftermath effects including overstressed health systems, increased number of cases, death rates, and patient aggression have significant implications on the healthcare workers' psychological well-being. Building on both the Health Belief Model and Conservation of Resources theory, this study examined the impact of patient aggression on healthcare workers' psychological well-being, anxiety, and mental health during the COVID-19 pandemic. Further, the study tested the mediating role of psychological well-being in the abovementioned relationships. Data obtained from 549 Lebanese healthcare workers in private hospitals in a two-wave survey was used to evaluate the proposed study's relationships, using confirmatory factor analysis and structural equation modeling. The results indicated that patient aggression has significant negative impact on healthcare workers' psychological well-being and mental health while it increases anxiety. Further, psychological well-being partially mediated the relationship between patient aggression and anxiety. Theoretical contributions, practical implications of the study, and suggestions for further studies are discussed.

Plain Language Summary

The aftermath effects including overstressed health systems, increased number of cases, death rates, and patient aggression have significant implications on the healthcare workers' psychological well-being. Building on both the Health Belief Model and Conservation of Resources theory, this study examined the impact of patient aggression on healthcare workers' psychological well-being, anxiety, and mental health during the COVID-19 pandemic. Further, the study tested the mediating role of psychological well-being in the abovementioned relationships. Data obtained from 549 Lebanese healthcare workers in private hospitals in a two-wave survey was used to evaluate the proposed study's relationships, using confirmatory factor analysis and structural equation modeling. The results indicated that patient aggression has significant negative impacts on healthcare workers' psychological well-being and mental health while it increases anxiety. Further, psychological well-being partially mediated the relationship between patient aggression and anxiety. Theoretical contributions, practical implications of the study, and suggestions for further studies are discussed.

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Data Availability Statement included at the end of the article

Introduction

Coronavirus (COVID-19) was first reported in February 2020 in Lebanon and subsequently emerged to become a health threat since there were over 441,000 positive confirmed cases and 5,808 deaths (Ministry of Public Health, 2021). During the pandemic, researchers have detected a sudden surge in patients' aggressive behavior (Asaoka et al., 2021) affecting the psychological health of healthcare workers (HCWs) (Babore et al., 2020) and the general public (Chen et al., 2020). Patient aggression is defined as an intended behavior that could lead to physical and psychological injuries (Ghareeb et al., 2021). Ultimately, the misconception and lack of adequate information about the viral transmission and infectivity as well as patients' consistent fear, anger, and witnesses to other patients succumbing to COVID-19 were some of the substantial-driven factors that have contributed to patient aggression towards HCWs (Asaoka et al., 2021; Ghareeb et al., 2021). Meanwhile, research evidence indicated that HCWs' psychological well-being (PWB), mental health, and anxiety were highly affected by stigmatization, uncertainty, ambiguity, and shortage of personal protective equipment due to the ongoing COVID-19 pandemic (Asaoka et al., 2021; Bitencourt, Alarcão, et al., 2021; Bitencourt, Silva, et al., 2021). Stemming from the aforementioned facts, and in line with Wąsowicz et al.'s (2021) recommendation to investigate the factors that would influence individuals' PWB and mental health, the present paper assesses the impact of patient aggression on HCWs' PWB, mental health, and anxiety during the COVID-19 pandemic.

In the extant literature, few researchers studied the linkages between PWB, mental health, and anxiety. For instance, Keller (2019) argued that mental health is highly connected with the living of a good human life, whereas PWB is one part of a good human life. Similarly, Barr (2016) claimed that PWB has eudaimonic underpinnings, while hedonic well-being is more concerned with high life satisfaction associated with more positive affect and less negative affect indicating that PWB can predict mental health. Meanwhile, Arslan et al. (2020) claimed that mental health is composed of mental well-health and mental ill-health such as anxiety. Anxiety is considered a psychological disorder and refers to uncontrollable excessive worries exhibited by individuals (Wittchen et al., 2011). According to Burns et al. (2022), low PWB would predict depression, however, individuals with good PWB would possess positive mental health and exhibit less mental health illness. Furthermore, Jeannotte et al.

(2021) revealed that PWB would promote positive mental health thus reducing or preventing mental-ill health such as anxiety. Therefore, in line with Arslan et al.'s (2020) study and in response to Burns et al.'s (2022) call for further investigations, the current study investigated the impact of PWB on mental health and anxiety.

Recently, researchers called for urgent investigations to be conducted due to the magnitude of COVID-19 and the potential psychological consequences the virus might have on HCWs (Babore et al., 2020). In particular, HCWs would experience poor quality sleep, anxiety, high levels of stress, and mental health problems during the COVID-19 pandemic due to high work demands and loss of essential resources in a short time (Da Silva Neto et al., 2021; Lu et al., 2020). Accordingly, COVID-19 has created profound negative implications on HCWs' PWB (Cao et al., 2020), and as such, further research is required to understand the underlying factors to provide psychological support. Under these circumstances, this study develops and tests a research model that examines PWB as a mediator between patient aggression and HCWs' mental health and anxiety.

This study contributes to the healthcare management and psychology literature in several ways. Previous studies indicated that occupational stress is common among HCWs due to the nature of their work (Da Silva Neto et al., 2021; Greenberg et al., 2020; Younis et al., 2021, 2022). Specifically, HCWs have been at the forefront of the pandemic, and that makes them prone to aggressive behaviors from patients (Ghareeb et al., 2021) affecting their PWB and mental health negatively (Asaoka et al., 2021; Bitencourt, Alarcão, et al., 2021) and elevating their anxiety levels (Bitencourt, Silva, et al., 2021). However, research about the prevalence of patient aggression towards HCWs in Lebanon during the COVID-19 pandemic is scarce in the literature. Therefore, it is important to examine the impact of patient aggression on HCWs' PWB, mental health, and anxiety.

In addition, various studies indicated that HCWs usually suffer from several psychological problems during large-scale disasters or risky pandemic diseases (Babore et al., 2020). Specifically, recent researchers revealed that HCWs would experience psychological problems because of the intensity of care services and responses to patients who have been diagnosed with COVID-19 (Da Silva Neto et al., 2021, Li et al., 2020). Over and above, Greenberg et al. (2020) indicated that HCWs might face ethical dilemmas and get engaged in complicated interventions leading to mistakes. Consequently, working in high-risk jobs or having direct contact with infected

patients might adversely affect HCWs' PWB and mental health (Lu et al., 2020). With such evidence, it is reasonable to examine the antecedents of HCWs' PWB, mental health, and anxiety during the COVID-19 pandemic to mitigate the impact of the viral outbreak on HCWs' psychological distress.

Furthermore, this paper is, to our knowledge, the first to investigate the impact of patient aggression on HCWs' mental health and anxiety mediated by PWB in the Lebanese healthcare context. In line with Arslan et al.'s (2020) study and contrary to other empirical studies that focused on negative PWB (Wąsowicz et al., 2021), the present study proposes that positive PWB will lead to better mental health and lower mental-ill health such as anxiety. Recently, Jeannotte et al. (2021) indicated that the dimensions of PWB would support positive mental health. Similarly, Azañedo et al. (2021) revealed that character strengths can be linked to PWB and mental health thus reducing other psychological disorders such as anxiety. Moreover, since PWB has been widely researched as a multidimensional and unidimensional construct in behavioral medicine and health psychology for its positive impacts on both physical and mental health (Trudel-Fitzgerald et al., 2019), this will be the first study that deals with PWB, mental health, and anxiety as three distinct constructs. Therefore, the need for further examination of the relationship between patient aggression and HCWs' PWB is essential in the psychology literature.

Finally, this study integrates the health belief model (HBM) (Rosenstock, 1974) and conservation of resources theory (COR) (Hobfoll, 1989) to investigate the impact of patient aggression on HCWs' PWB, mental health, and anxiety during the COVID-19 pandemic. It is known that when individuals perceive a threat of losing their valuable resources, they get engaged in specific behavioral reactions and cognitive processes to mitigate the stress induced by any traumatic event (Hassanie et al., 2022). Furthermore, Millear (2013) revealed that individuals with more personal resources will exhibit greater PWB, better mental health, and lower anxiety. Under these conditions, more empirical evidence will broaden our current knowledge.

Theoretical Foundation

The health belief model (HBM) (Rosenstock, 1974) and conservation of resources theory (COR) (Hobfoll, 1989) are used as a conceptual framework to develop the proposed interrelationships in this study.

The HBM is one of the fundamental models adapted from behavioral sciences to address the social context surrounding individuals' behavior in healthcare settings. The HBM assumes that HCWs will engage in a specific health behavior if they are certain their intervention would prevent negative health outcomes or if they perceive that a specific health situation would pose a threat to their lives. The HBM comprises four health beliefs including perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Rosenstock, 1974). The constructs of perceived susceptibility and severity reflect the belief that there is a high tendency to contract a disease and the severe negative implications of the disease which prompts the HCWs to take action while the perceived benefits and barriers reflect the gain involved by implementing health behavior and the likely implications of such health behavior. In other words, HBM explains the significant relationship between health beliefs and prevention behavior.

The COR theory (Hobfoll, 1989) explains individuals' behavior in the presence of workplace stressors. The theory posits that individuals tend to obtain and protect valuable resources to cope with and overcome stressful working conditions. These valuable resources are personal, object, condition, and energy. The COR theory assumes that people tend to protect the valuable resources that help them to respond to all kinds of workplace demands (Hobfoll, 1989). In particular, Millear (2013) claimed that individuals who conserve and acquire more personal resources will demonstrate better PWB, positive mental health, and lower anxiety levels. However, in the healthcare setting, HCWs may experience psychological stress and physical exhaustion due to the overwhelming COVID-19 pandemic outcomes (Blake et al., 2020).

Hypotheses Development

Patient Aggression and Healthcare Workers' Psychological Well-being

During the COVID-19 pandemic, HCWs were susceptible to emotional or physical attacks from patients, thus affecting their PWB (Asaoka et al., 2021; Bitencourt, Alarcão, et al., 2021; Bitencourt, Silva, et al., 2021; Ghareeb et al., 2021). However, it is difficult to determine the prevalence of patient aggression because it is relatively underreported (Ghareeb et al., 2021).

PWB refers to individuals' positive capacities and abilities related to the concept of well-being as autonomy, environmental mastery, personal growth, positive relations, the purpose of life, and self-acceptance (Ryff & Keyes, 1995). Previous studies showed that HCWs work in a complicated environment and often experience rapidly changing working conditions due to time pressure, demands of professionalism, complicated situations, high work overload, and patient aggression (Akbolat et al., 2021) thus inducing poor PWB (Cao et al., 2020). However, in line with the COR theory and HBM, individuals who perceive a threat of losing their valuable resources would get engaged in specific behavioral

processes such as career development processes to conserve their well-being and maintain their adaptive functioning (Hassanie et al., 2022). In particular, HCWs would demonstrate adaptive readiness by conserving their career adaptability resources that are essential to face occupational challenges and traumatic events. Accordingly, we propose the hypothesis below:

> Hypothesis 1 (H1): Patient aggression is negatively related to healthcare workers' PWB during the COVID-19 pandemic.

Effects of Patient Aggression on Anxiety and Mental Health

Several studies have shown that HCWs who are victims of patient aggression during the COVID-19 pandemic experience high levels of anxiety (Bitencourt, Silva, et al., 2021) and poor mental health (Asaoka et al., 2021). Recently, Ghareeb et al. (2021) revealed that HCWs were victims of violence and stigmatization during the COVID-19 pandemic; and consequently suffered from various physical and psychological disorders. It is known that dealing with aggressive patients is a source of emotional stress, burnout, and turnover intentions (Akbolat et al., 2021). In addition to patient aggression, HCWs were prone to stress and often experience fear, depression, anxiety, and serious mental health problems (Younis et al., 2021) due to work overload, work pressure, limited empowerment, direct contact with infected patients, and workplace violence overwhelming the psychological status of HCWs (Cai et al., 2020; Lai et al., 2020; Lu et al., 2020). Therefore, as suggested by the COR theory and HBM, those HCWs who experience anxiety and poor mental health due to their exposure to patient aggression are likely to engage in specific health behavior to avert negative health outcomes and protect the valuable resources that help them to respond to all kinds of workplace demands in the ongoing COVID-19 pandemic. Accordingly, we propose the hypotheses below:

> Hypothesis 2a (H2a): Patient aggression is positively related to anxiety during the COVID-19 pandemic.
> Hypothesis 2b (H2b): Patient aggression is negatively related to mental health during the COVID-19 pandemic.

The Relationship between Psychological Well-being, Anxiety, and Mental Health

The current paper attempts to assess the impact of PWB on HCWs' mental health and anxiety. A current review of the literature revealed that poor PWB was associated with various psychological disorders such as anxiety, depression, and post-traumatic stress disorder (Ryff, 2014). On the other hand, Burns et al. (2022) indicated that PWB would be an essential resource for mental

health reducing mental health illnesses such as anxiety. Therefore, psychological support is vital and has a great impact on the individual characteristics and psychological outcomes of HCWs (Blake et al., 2020; Cai et al., 2020). In line with the COR theory and along with Mana et al.'s (2021) study, individual, social, and national resources would influence individuals' levels of anxiety and mental health during the COVID-19 pandemic. It is known that individuals perceive health as an essential resource for everyday life (Azañedo et al., 2021). In support of this, PWB is likely to enhance mental health and reduce anxiety. Based on the COR theory and HBM, HCWs who enjoy good PWB will likely take action when they perceive the benefits of engaging in a specific health behavior thus enabling them to preserve their valuable resources, improve their mental health and prevent negative health outcomes such as anxiety. Accordingly, we propose the hypotheses below:

> Hypothesis 3a (H3a): PWB is negatively related to anxiety during the COVID-19 pandemic.
> Hypothesis 3b (H3b): PWB is positively related to mental health during the COVID-19 pandemic.

The Mediating Role of Psychological Well-being

The discussion regarding the effect of patient aggression on HCWs' mental health and anxiety, presented before, highlights the mediating role of PWB. Specifically, HCWs were exposed to patient aggression while they were providing care services to the infected patients and their aggrieved family members during pandemics (Asaoka et al., 2021, Ghareeb et al., 2021). Meanwhile, HCWs might have displayed anxiety, depression, high levels of stress, emotional exhaustion, traumatic stress, and burnout which lead to negative consequences on individuals, patients, and healthcare systems (Blake et al., 2020; Younis et al., 2021). In such a situation, and in line with the COR theory, HCWs will risk losing their accumulated resources or the ability to gain return as expected from their invested resources in a short period (Hassanie et al., 2022). Such experience affects their PWB (Bitencourt, Alarcão, et al., 2021) and, in turn, leads to poor mental health (Asaoka al el., 2021) and anxiety (Bitencourt, Silva, et al., 2021). Therefore, the management of a healthcare organization needs to develop strategies to care for the PWB and mental health of HCWs (Asaoka et al., 2021; Cao et al., 2020). Accordingly, we propose the hypotheses below:

> Hypothesis 4 (H4): PWB mediates the relationship between patient aggression and anxiety during the COVID-19 pandemic.
> Hypothesis 5 (H5): PWB mediates the relationship between patient aggression and mental health during the COVID-19 pandemic.
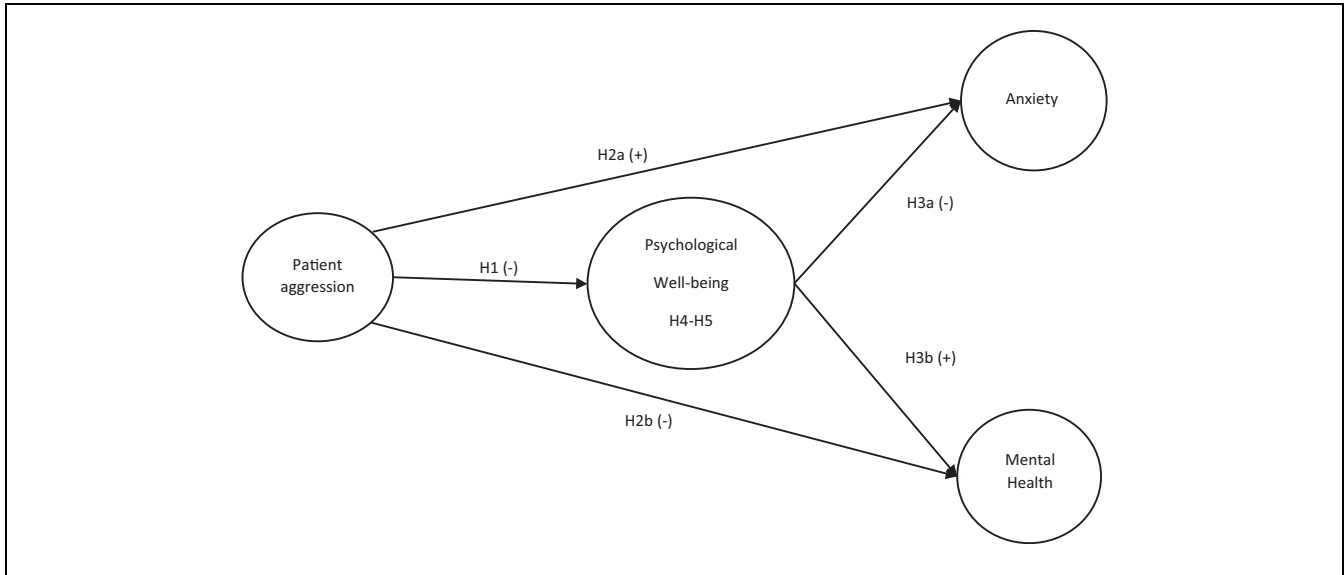
Figure 1. Research model.

The conceptual model in Figure 1 presents the relationships among the study constructs. Specifically, patient aggression enhances anxiety and reduces mental health among HCWs during the COVID-19 pandemic. Moreover, the model proposes that PWB mediates the aforesaid linkages.

Research Methodology

Respondents and Data Collection

This paper used data collected from HCWs to assess patient aggression. HCWs such as nurses, physicians, laboratory technologists, and radiology technicians, who had direct contact with patients in different departments, were included in the study since they would confront asymptomatic patients (Bai et al., 2020). Accordingly, researchers did not differentiate between the HCWs' professions. Data were obtained in the early stage of the COVID-19 outbreak (March 16 through March 29, 2020) in Lebanon. According to the Syndicate of hospitals, the majority of the hospitals 133 (88%) in Lebanon are private. Only seventeen private hospitals were permitted by the Ministry of Public Health to receive and examine patients and operate isolation facilities for suspected cases of COVID-19. Thirteen hospital managers out of seventeen, who were contacted by the researchers, agreed to participate in this study. Accordingly, this study was approved by the human resource managers of the participating hospitals before data collection and followed the ethical standards recommended by the participating hospitals during data collection.

To minimize common method bias, the researchers adapted various procedural remedies (Podsakoff et al., 2012). Firstly, the human resource managers in each hospital coordinated the data collection process and provided the researchers with a list of the HCWs' names and identification codes to match the questionnaires. The human resource managers provided supervisors in each medical department with several survey packs relevant to the number of HCWs. Secondly, each survey's cover page encouraged voluntary participation and indicated that there were no right or wrong answers in this survey. Moreover, the cover page ensured that the gathered data were kept confidential and anonymous and highlighted that the respondents have the right to withdraw from the research at any time if they perceived coercion. Thirdly, each questionnaire was returned in a sealed envelope and was submitted back to the human resource managers by the supervisors. In addition, informed consent was obtained from all the participants. Finally, another procedural remedy adapted to decrease common method bias was the temporal separation of two weeks lag time between predictor and criterion (Podsakoff et al., 2012). Specifically, Time 1 survey included items related to patient aggression, PWB, and participants' demographic characteristics such as age, gender, experience, and level of education. Time 2 survey comprised anxiety and mental health items.

Five hundred and forty-nine out of the 571 questionnaires distributed were returned, constituting a 96% response rate. In line with Hardwick Research's (2022) published resources, the sample size would be 525 at a confidence level 95% and a reliability level ± 3.0% if the population size is approximately 1000. Therefore, the

study's final sample size 549 is satisfactory achieving 97% reliability and ± 3.0% variations in the results if the survey is repeated 100 times. Such an approach was utilized by Younis et al. (2022) and Younis et al. (2021).

Measurement Items

All scale items used in this study were adapted from empirical studies with well-known validated measures. Patient aggression was measured with 5 items adapted from Dormann and Zapf (2004). Responses to the items were created on a five-point Likert scale selection (1 = not at all true to 5 = absolutely true). However, there was a modification such that the word 'patients' was used instead of 'customers' in the items. The modified version was pre-tested before the actual distribution to the HCWs (Alpha = 0.97). Meanwhile, PWB was measured with Ryff's Psychological Well-Being Scale (Ryff & Keyes, 1995). It consists of 18 items, 3 items for each of the 6 dimensions (Alpha = 0.79). Responses to the items were created on a six-point Likert scale selection (1 = strongly disagree to 6 = strongly agree). Moreover, the current study adopts the GAD-7 scale to assess the level of anxiety among HCWs (Wittchen et al., 2011). It measures the extent to which HCWs were bothered by the seven core symptoms of GAD during the COVID-19 outbreak (Alpha = 0.98). Responses to the items were created on a three-point Likert scale selection (0 = not at all to 3 = nearly every day). Furthermore, mental health was assessed with General Health Questionnaire-12. Several empirical studies have adapted this unidimensional screening test to assess psychological strains and minor psychiatric disorders by examining the degree of effectiveness and success felt by an individual in various settings (Banks et al., 1980). General Health Questionnaire-12 determines the severity of psychiatric disorders related to employment problems. Responses to the items were created on a four-point Likert scale selection (0 = not at all to 3 = much more than usual). While Cronbach's alpha appears low (Alpha = 0.50), Perry et al.'s (2004) study reported that alpha ranging from 0.5 to 0.7 indicates moderate reliability.

The back-translation method was used to prepare all of the questionnaires. The English language questionnaires were translated into Arabic and then translated back into the English language via the back-translation technique. The questionnaires were piloted with twenty HCWs. The results indicated that there were no compelling reasons to make changes in the measurement items.

Results

Data Analysis

The data analysis followed the two-step approach recommended by Anderson and Gerbing (1988). The convergent and discriminant validity, as well as, the internal consistency reliability was assessed by confirmatory factor analysis. On the other hand, the proposed hypotheses were tested via structural equation modeling. Also, Amos 20 (Arbuckle, 2011) was used to assess the significance of the indirect relationships among constructs by implementing the bootstrapping method with a 5000 sample size developed at a 95% confidence interval. Minimum discrepancy (CMIN), standardized root mean square residual (SRMR), root mean square error of approximation (RMSEA), degrees of freedom (DF), parsimony normed fit index (PNFI), comparative fit index (CFI), Tucker-Lewis index (TLI), and incremental fit index (IFI) were used to estimate the measurement and path analysis (Hair et al., 2010).

Descriptive statistics

The results of the study sample of 549 HCWs in Lebanon included 315 females (57.4%) and 234 males (42.6%). The respondents' age ranged from 18 to 58 and above. While the majority 238 (42.8%) had a bachelor's degree, only 80 (14.6%) had a vocational school diploma. The participants' marital status showed that 399 (72.7%) were married and most of them 175 (31.9%) had between sixteen and twenty years of experience in the health sector.

Moreover, the results revealed that most HCWs were exposed to patient aggression. For instance, 30.8% of the HCWs claimed that it was much true that patients often shout at them, whereas 38.3% of the respondents indicated that they were attacked verbally by the patients. Furthermore, HCWs showed that patients were always complaining about them (28.2%), or got angry at them even over minor matters (34.6%). Over and above, the findings indicated that 59% of the respondents felt nervous and anxious. Specifically, 59.9% of the HCWs were restless, had trouble relaxing, and worried too much about different things and 60.8% were easily annoyed or irritable nearly every day.

While assessing the HCWs' mental health, the results showed that 48.3% of the HCWs lost much sleep over worry and 64.5% felt that they were constantly under strain. Moreover, 93.6% of the respondents were not able to enjoy their daily activities, whereas, 53.7% felt that they were depressed much more than usual and 41% were not able to face up their problems.

Psychometric Properties of the Measures

There were four latent variables and 42 observed variables in the measurement model. However, to improve the normality and reliability of the measure four-item parcel was created for PWB and three-item parcels for

Table 1. Confirmatory Factor Analysis Results.

Scale items	Loadings	t-values	CR	AVE	α
Patient aggression (PA)			0.92	0.75	.97
PA 1	0.96	1.00[a]			
PA 2	0.98	63.12			
PA 3	0.83	36.55			
PA 4	0.89	34.83			
PA 5	0.92	56.52			
Psychological well-being (PWB)			0.97	0.85	.79
PWB 1	08.0	1.00[a]			
PWB 2	0.81	32.40			
PWB 3	0.93	31.42			
PWB 4	0.92	30.12			
Anxiety			0.98	0.94	.98
Anxiety 1	0.99	1.00*			
Anxiety 2	0.98	86.12			
Anxiety 3	0.93	58.90			
Mental health (MNTH)			0.70	0.53	.50
MNTH 1	0.50	1.00*			
MNTH 2	—	—			
MNTH 3	0.92	2.95			
Model fit statistics: CMIN = 109.046; DF = 42; CMIN/df = 2.59; CFI = 0.99; IFI = 0.99; TLI = 0.98; RMSEA = 0.054; SRMR = 0.062					

Note. All loadings are significant at the 0.001 level. CMIN = minimum discrepancy; DF = Degrees of freedom; CFI = comparative fit index; IFI = incremental fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; — Item deleted.
[a]Item scale fixed at 1.00.

each anxiety and mental health with the items in each measure randomly assigned since the pre-test factor analysis demonstrated high factor loadings of the original items (Kishton & Widaman, 1994). One item parcel was deleted from mental health due to low loading and measurement error. Specifically, three approaches to parceling were explored in this study (Yang et al., 2009). First, a single parcel was created, that is, all items for each variable were assigned to a single parcel. Secondly, items for each variable were randomly assigned to create three and four parcels. Finally, items with similar factor loadings for each variable were assigned to create three and four parcels. However, only the second approach met the justification for parceling (e.g., reliability and normality of the measure).

As recommended by Hair et al. (2010), the measurement items conform to the assumptions of confirmatory factor analysis of the sample since the skewness values ranged between -0.124 and -0.447, and kurtosis results were between -0.180 and -0.683. Moreover, the results indicated that the loadings had acceptable fit statistics: CMIN = 109.046, DF = 42, CMIN/DF = 2.59, CFI = 0.99, IFI = 0.99, TLI = 0.98, RMSEA = 0.054, and SRMR = 0.062. Further, all the loadings were significant (p < .001).

On the other hand, the convergent and discriminant validity were examined according to Fornell and Larcker's (1981) criterion. In Table 1, all item loadings were between 0.50 and 0.99 thus confirming the convergent validity of the measures. Moreover, the value of the average variance extracted (AVE) for each variable was greater than the squared correlation of other variables, thus ascertaining the discriminant validity. Also, Table 1 indicated that composite reliability recorded values greater than 0.60 as suggested by Hair et al. (2010).

The study also examined the potential relationships of some selected characteristics of the sample (age, gender, experience, and marital status). The results indicate that age had a statistically significant yet negative relationship with PWB. Likewise, gender was significantly and negatively related to PWB and anxiety. While experience had a statistically significant yet negative relationship with patient aggression, it exhibits a positive relationship with PWB. Finally, marital status was positively and significantly related to PWB. The mean, standard deviation, and correlation results of the latent variables are shown in Table 2. The correlation results indicate that patient aggression reduced PWB (r = -0.109, p = 0.05) and mental health (r = -0.159, p = 0.01) while it increased anxiety (r = 0.138, p = 0.01). On the other hand, PWB had statistically non-significant relationship with mental health (r = -0.071, p = n.s), while it reduced anxiety (r = -0.123, p = 0.05).

Tests of the Hypothesized Model

The findings in Figure 2 revealed that the hypothesized model fits the data reasonably well with the following fit statistics CMIN = 1.809, DF = 1, CMIN/DF = 1.809, CFI = 0.97, IFI = 0.98, RMSEA = 0.038, and SRMR =

Table 2. Means, Standard Deviation, and Correlations of Latent Variables.

Variables	M	SD	PA	PWB	Anxiety	MNTH
PA	3.71	0.93	—			
PWB	5.14	0.53	−0.109*	—		
Anxiety	2.49	0.66	0.138**	−0.123*	—	
MNTH	1.52	0.38	−0.159**	−0.071	−0.078	—

Note. PA = patient aggression; PWB = psychological well-being; MNTH = mental health.
*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).
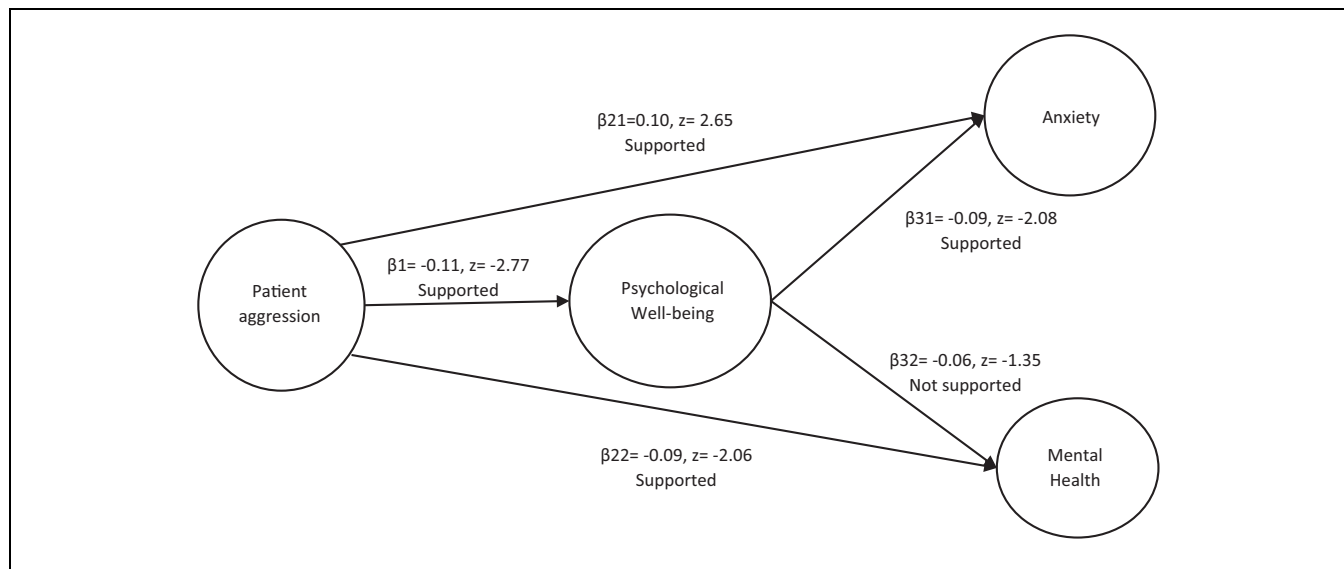
Figure 2. Resultant tested model.

0.021. As presented in Figure 1, patient aggression had a negative but statistically significant influence on PWB (β = -0.11, z = -2.77). Hence, H1 was supported. Moreover, the results indicated that patient aggression had a positive and significant relationship with anxiety (β = 0.10, z = 2.65) demonstrating support for H2a. Meanwhile, patient aggression had a statistically significant yet negative impact on mental health (β = -0.09, z = -2.06). Therefore, H2b was supported. Similarly, PWB had a negative significant influence on anxiety (β = -0.09, z = -2.08). Thus, H3a was supported. However, the effect of PWB was not statistically significant on mental health, hence, there was no support for H3b (β = -0.06, z = -1.35).

The mediating effects of PWB were shown in Table 3. The study implemented a Bootstrapping method with a 5000 sample size, accelerated confidence interval, and a bias-corrected percentile to estimate the significance of the indirect path (Hayes & Little, 2018). The results in Table 3 indicated that PWB partially mediated the effect of patient aggression on anxiety taking into consideration the lower-level confidence interval (LLCI) and upper-level confidence interval (indirect estimate = 0.007, LLCI = 0.003, ULCI = 0.012, p < 0.003). Thus, H4 was supported. On the other hand, H5 is not supported because PWB as a mediating construct has a statistically non-significant impact on mental health. The results explain 2% of the variance in patient aggression, 12% in PWB, 10% in anxiety, and 4% in mental health.

Discussion

Summary of Findings

This study proposed and examined the relationships between patient aggression and HCWs' psychological disorders related to anxiety and mental health mediated by PWB during the COVID-19 pandemic with data gathered from HCWs in Lebanese private healthcare hospitals. The relationships between the above-mentioned constructs were developed in line with the tenets of HBM and COR theory.

Table 3. Bootstrapping Results of the Mediating Effect of Psychological Well-Being.

Hypothesized mediated effects	Unstandardized indirect estimates	LLCI	ULCI	*p* value
PA → PWB→Anxiety (−0.064[a] × −1.04[b])	0.007	0.003	0.012	.003
PA → PWB → MNTH (−0.064[a] × −0.043[b])	0.003	0.001	0.005	.001

Note. A bootstrapping method with 5,000 sample size generated at 95% confidence interval (CI) was adopted to test the significance of the indirect effects. Gender and age were the control variables; LLCI = lower-level confidence interval; upper-level confidence interval; PA = patient aggression; PWB = psychological well-being; MNTH = mental health
[a]Denotes the direct effect of the predictor variable on the mediator.
[b]Denotes the direct effect of the mediator on the criterion variable.

The findings of the study showed that patient aggression has a statistically significant yet negative impact on HCWs' PWB. This is in line with our proposed expectation and results from other empirical studies (Bitencourt, Alarcão, et al., 2021). In line with the COR theory, HCWs would risk losing their resources and becoming emotionally exhausted during the pandemic due to the misinformation regarding COVID-19 transmission, infectivity, and treatment and in particular, patients' dissatisfaction with the course of treatment (Cai et al., 2020). Moreover, the uncertainty surrounding the COVID-19 outbreak might trigger aggressive behavior toward HCWs (Ghareeb et al., 2021), leading to poor PWB (Bitencourt, Alarcão, et al., 2021).

The results suggest that HCWs who are exposed to patient aggression suffer high levels of anxiety and poor mental health. In line with Younis et al. (2022), the findings reveal that HCWs demonstrate high levels of nervousness and anxiousness and are easily annoyed, irritable, and restless. Although hospitals have applied several measures to mitigate the impact of the COVID-19 pandemic on HCWs' mental health, patient aggression still represents a major threat facing HCWs (Ghareeb et al., 2021; Li et al., 2020). Under such circumstances, HCWs might experience anxiety, depression, and fear (Cao et al., 2020; Younis et al., 2022). Based on the tenets of COR theory, patient aggression would deplete HCWs' cognitive and emotional resources and, thus, leads to anxiety (Bitencourt, Silva, et al., 2021), and poor mental health (Asaoka et al., 2021). However, HCWs combatted the coronavirus bravely (Babore et al., 2020). Therefore, and according to HBM, HCWs would react in a specific way if they perceive a threat to their lives.

As proposed, the findings reveal a statistically significant but negative association between HCWs' PWB and anxiety. Consistent with the results of previous studies (Cao et al., 2020; Ryff, 2014), the results indicated that high PWB would reduce anxiety levels among individuals. In particular, Cao et al. (2020) claimed that when HCWs' psychological needs are well addressed, the negative impact of the COVID-19 pandemic on HCWs' PWB would be mitigated and HCWs' psychological health would be preserved.

However, contrary to our proposition, the findings of the study revealed a statistically non-significant relationship between HCWs' PWB and mental health. Previous studies indicated that PWB is a critical element that would stimulate HCWs' mental health (Burns et al., 2022). However, the unprecedented pandemic could provide explanations for the inconsistency of results with the previous literature. In line with the COR theory and HBM, the potential explanation might be related to individual resources, compliance with standard precautions, and organizational support that would enhance the psychological health of the medical staff (Cai et al., 2020; Younis et al., 2021, 2022). Moreover, PWB would be triggered by psychological support such as reduced shift hours, adequate COVID-19 patient-related training, and tailored mental health support (Blake et al., 2020), and that might have been lacking at that time in the Lebanese hospitals.

The findings also indicate that PWB partially mediates the relationship between patient aggression and HCWs' anxiety. In particular, high PWB would enable HCWs to tap into the available resources, and in turn, suffer less anxiety. This is consistent with the tenets of the HBM and COR theory and previous studies (Hassanie et al., 2022). Those HCWs that have access to up-to-date information on the effective use of hospital resources, specific details of the virus display, and organizational support would demonstrate lower levels of anxiety during the pandemic (Cai et al., 2020).

Theoretical Implications

The findings of this study provide theoretical implications for the psychological and healthcare management literature in the following ways: First, patient aggression has been considered a critical problem facing HCWs worldwide (Asaoka et al., 2021). Yet, evidence of the impact of patient aggression on HCWs' psychological health in the ongoing COVID-19 pandemic is scarce. Accordingly, this paper utilized the COR theory and HBM to address the linkages between patient aggression, PWB, mental health, and anxiety. Examining the impact of patient aggression on HCWs' psychological status in

developing countries such as Lebanon during the COVID-19 outbreak is imperative because HCWs with positive PWB would be involved in specific healthcare practices that would enable them to conserve their valuable resources and recover rapidly from stressful working conditions.

Second, during large-scale disasters or pandemics, HCWs would suffer from mental breakdowns (Li et al., 2020). Further, research reported that patient aggression toward HCWs has tremendously increased during the COVID-19 pandemic (Asaoka et al., 2021). Using the COR theory and HBM, PWB was utilized as a mediator linking patient aggression to each of the mental health and anxiety constructs. The paper's findings discussed before provide additional insights into the healthcare management and psychological literature since no empirical studies examined the relationship between patient aggression and HCWs' mental health and anxiety via the mediating role of PWB.

Finally, the findings indicate that PWB has a statistically significant yet negative effect on anxiety and a non-significant impact on mental health. In line with the COR theory and HBM, HCWs would get engaged in specific health behaviors in an attempt to conserve their essential resources to respond adequately to all work demands during the COVID-19 pandemic. Although recent research indicated that having direct contact with infected patients may adversely affect HCWs' mental health (Greenberg et al., 2020), the non-significant relationship between PWB and mental health might show that certain environment-related factors, that might enhance PWB, need to be understood to enable healthcare management to develop appropriate strategies that can mitigate the impact of patient aggression accompanied with the viral outbreak on HCWs' mental health.

Managerial Implications

The assessment of psychological problems among HCWs helps to control psychological problems and recover rapidly from pandemics (Babore et al., 2020). Therefore, the findings provide a few managerial implications.

First, patient aggression reduces HCWs' PWB and mental health while it increases anxiety. It is highly recommended to encourage HCWs to report any undesirable behavior displayed by patients. Specifically, healthcare management should develop an appropriate channel that enables HCWs to report any form of patient aggression and a system that guarantees their safety and protection from such aggressive behavior from patients. Ultimately, establishing an enabling work environment that fosters HCWs' confidence in management's readiness to address patient aggression is critical (Younis et al., 2021, 2022). Moreover, it would be

beneficial for top management to design specific interventions that would target the strengths that our study has found to reduce patient aggression and enhance HCWs' PWB and mental health. For instance, positive psychology interventions should also take into account both dispositional and environmental factors (Trudel-Fitzgerald et al., 2019) which can influence individuals' PWB and mental health accordingly.

Second, PWB reduces anxiety and has no relationship with mental health. HCWs require management support to maintain PWB. Thus, healthcare management should implement supportive interventions that include quality of clinical and managerial leadership, relevant training, organizational support, and other coping strategies that increase HCWs' flexibility and ability to preserve their resources during the pandemic.

Third, healthcare management must drive health authorities to develop effective treatment procedures and preventive measures to reduce the adverse impact of patient aggression on HCWs' psychological health status. Such psychological counseling intervention may include conducting effective training and educational programs, providing safety equipment, maintaining a safe environment, and ensuring clear communication. Moreover, healthcare management should initiate an online platform that gives HCWs access to psychological counseling services due to its accessibility and convenience compared to the hybrid platforms that could have been limited or unavailable during the COVID-19 pandemic (Younis et al., 2021).

Finally, adopting preventive measures is essential during pandemics to promote HCWs' mental health. In particular, healthcare management, media organizations, and civil society should highlight the consequences of patient aggression on HCWs. Healthcare management, government, and media outlets should design appropriate communication channels to communicate correct information about COVID-19 to the public to avoid disinformation. Organizing antiviolence informative campaigns to create public awareness regarding the adverse effect of patient aggression on HCWs' psychological health and the quality of care services provided seems essential. Such campaigns will enlighten the public on pandemic-related issues and correct false information about the COVID-19 pandemic.

Limitations and Future Research

While the present research contributes to the literature in several ways, a few potential drawbacks and future research suggestions should be taken into consideration. First, this paper investigates the impact of patient aggression on HCWs' PWB during COVID-19. Although patient aggression is an occupational threat facing HCWs

globally, it is underestimated and underreported for several reasons. Thus, future research that investigates personality traits and career adaptability as moderators and/or mediators will significantly contribute to the literature. Furthermore, researchers indicated that social support would mitigate HCWs' negative mental health outcomes (Lai et al., 2020). Therefore, future research could assess the indirect relationship between patient aggression and HCWs' mental health via PWB moderated by social support. Moreover, future studies could examine how patient aggression would affect HCWs' psychological health taking into consideration the typology of HCWs' professions. Second, cross-sectional data obtained from HCWs in Lebanese private hospitals within a two-week time interval was used to assess the study's relationships. Therefore, the causal relationship established in this study cannot be generalized. However, longitudinal research could be beneficial in making conclusions about the causation of the proposed interactions. Moreover, the current study could be replicated during the later stages of the new crown epidemic to provide additional insights into the healthcare management. Finally, the data used in this study were based on self-reported data, and the data collection process was coordinated by human resource managers in each hospital.

Declaration of Conflicting Interests

Funding

Ethics Statement

All the procedures performed in this study involving data collection were following the ethical standards of all participating hospitals.

Informed Consent

Informed consent was obtained from all participants included in this study.

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Data Availablity Statement

The data that support the findings of the study are available from the corresponding author upon reasonable request.

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